

4. Specification

4-1. General Specification

Display	3½ LCD 0.71" height,max. reading of 1999 with annunciators.
Polarity	Automatic "-" is displayed.
Overrange Indication	'OL' on LCD is displayed.
Low Battery Indication	'  ' sign on LCD readout.
Auto Power off	Approx. 30 minutes.
Operation Temperature	0°C to 50°C less than 80% relative humidity up to 35°C less than 70% relative humidity from 35°C to 50°C
Storage Temperature	-15°C to 50°C
Temperature Coefficient	0°C to 18°C and 28°C to 50°C less than 0.1×applicable accuracy specification per °C
Power	9V Alkaline or Carbon Zinc battery (NEDA 1604)
Battery Life(typical)	100 hours with carbon zinc cells 200 hours with alkaline cells.
Dimension	90(W)×190(L)×35(H)mm
Weight	Approx. 320 g
Accessories	Safety Test Lead 1 pair Operator's Manual 1 pc.

4-2. Measurement Specification

Accuracy of specifications apply for 1 year after purchase when operated in a temperature of 18°C to 28°C (64°F to 82°F) and a relative humidity less than 75%.

Basic electrical specifications are given as $\pm((\% \text{ of reading}) + (\text{number of least significant digits}))$

DC Voltage

Range	Resolution	Accuracy	Maximum Input
200mV	100 μ V	$\pm(0.25\% \text{ of rdg} + 2\text{dgt})$	DC 1000V or PEAK AC
2V	1mV	$\pm(0.5\% \text{ of rdg} + 2\text{dgt})$	
20V	10mV	"	
200V	100mV	"	
1000V	1V	$\pm(0.5\% \text{ of rdg} + 2\text{dgt})$	

NORMAL MODE REJECTION RATIO : greater than 46dB at 50Hz,
60Hz(1K unbalance)

Overload Protection : 1100V DC or peak AC for 50 seconds.

AC Voltage

Range	Resolution	Accuracy	Maximum Input
200mV	100 μ V	$\pm(1.0\% \text{ of rdg} + 4\text{dgt})$	AC 750V max. 50Hz-400Hz
2V	1mV	"	
20V	10mV	"	
200V	100mV	"	
750V	1V	$\pm(1.5\% \text{ of rdg} + 5\text{dgt})$	

Resistance

Range	Resolution	Accuracy	Input Protection
200 Ω	0.1 Ω	$\pm(0.8\% \text{ of rdg} + 4\text{dgt})$	Protected by PTC (500V rms)
2K Ω	1 Ω	"	
20K Ω	10 Ω	"	
200K Ω	100 Ω	"	
2M Ω	1K Ω	$\pm(1.5\% \text{ of rdg} + 5\text{dgt})$	
20M Ω	10K Ω	$\pm(2.0\% \text{ of rdg} + 10\text{dgt})$	
200M Ω	100K Ω	$\pm((5\% - 10) \text{ of rdg} + 10\text{dgt})$	
2000M Ω	1M Ω	"	

DC Current

Range	Resolution	Accuracy	Input Protection
200 μ A	100nA	$\pm(0.8\% \text{ of rdg} + 4\text{dgt})$	Protected by 2A/250V Fuse
2mA	1 μ A	"	
20mA	10 μ A	"	
200mA	100 μ A	$\pm(1.0\% \text{ of rdg} + 3\text{dgt})$	
2A	1mA	$\pm(1.2\% \text{ of rdg} + 3\text{dgt})$	
10A	10mA	$\pm(1.5\% \text{ of rdg} + 3\text{dgt})$	10A/250V Fuse

Maximum Measuring Voltage Drop : less than 300mV

AC Current

Range	Resolution	Accuracy	Input Protection
200 μ A	100nA	$\pm(1.2\% \text{ of rdg} + 3\text{dgt})$	Protected by 2A/250V Fuse
2mA	1 μ A	"	
20mA	10 μ A	"	
200mA	100 μ A	$\pm(1.5\% \text{ of rdg} + 5\text{dgt})$	
2A	1mA	"	
10A	10mA	$\pm(2.0\% \text{ of rdg} + 5\text{dgt})$	10A/250V Fuse

Maximum Measuring Voltage Drop : less than 300mV

Frequency

Range	Resolution	Accuracy	Input Level
2KHz	1Hz	$\pm(0.25\% \text{ of rdg} + 2\text{dgt})$	Maximum Input Level: 500V rms
20KHz	10Hz	"	
200KHz	100Hz	"	
2MHz	1KHz	"	
20MHz	10KHz	"	

Input Sensitivity : 2KHz to 2MHz-200mV rms(TTL only)
20MHz-500mV rms(TTL only)

Min. Pulse Width : < 25ns

Capacitance

Range	Resolution	Accuracy	Test Voltage & Frequency
2nF	1pF	$\pm(3.0\% \text{ of rdg} + 3\text{dgt})$	Test Frequency 400Hz $\pm$ 3.0%
20nF	10pF	"	Test Voltage 120mV
200nF	100pF	"	
2 μ F	1nF	"	
20 μ F	10nF	"	

TR hFE

Range	Test Condition	Base Current
NPN	10 μ A DC	@ 3.0V DC
PNP	"	"

Continuity Test

Range	Threshold	Continuity beeper	Response Time
•	30Ω	2.5KHz	< 100ms

DIODE TEST

Measures forward resistance of a semiconductor junction in K Ohm at max. test current of 1.5mA.

Logic Test

Type	Threshold	Frequency Response	Detectable Pulse Width
TTL	Logic 1: 2.5V ± 0.8V Logic 0: 0.8V ± 0.5V	20MHz	25ns, min.
CMOS	Logic 1: 4.0V ± 1.0V Logic 0: 2.0V ± 0.5V	20MHz	25ns, min.

5. Operation

5-1. Preparation and Caution before measurement

- Function switch should be set to the range to be measured before operation.
- If the function must be switched during a measurement, always remove the test leads from the circuit being measured.
- If the unit is used near noise generated equipment, be aware that the display may become unstable or indicate large errors.
- Avoid using the unit in places with rapid temperature variations.
- In order to prevent damage or injury to the unit, never fail to keep the maximum tolerable voltage and current, especially for the 10A current range.
- Carefully inspect test lead. If damaged, discard and replace.
- In order to avoid wrong range selection, be sure to check annunciator on the display.

5-2. Front Panel Description

- Liquid Crystal Display
- DC/AC Selector Switch
- Peak Hold Switch
- Data Hold Switch
- Function/Rotary Switch
- Capacitor Test Socket
- TR hFE Test Socket
- 10A input jack
- mA·2A input jack
- Common input jack
- V·Ω Frequency input jack
- Holster (OPTION)

